REMARKS

Claims 1-10 are pending in the application; the status of the claims is as follows:

Claims 1-8 and 10 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,330,055 B1 to Higashino ("Higashino") in view of U.S. Patent No. 5,563,577 to Muramatsu et al. ("Muramatsu").

Claim 9 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Higashino, in view of Muramatsu, and further in view of U.S. Patent No. 6,433,824 B1 to Tanaka et al. ("Tanaka").

Claim 8 has been amended to more distinctly claim the subject invention and improve the grammatical form of the claim. These changes are not necessitated by the prior art, are unrelated to the patentability of the invention over the prior art, and do not introduce any new matter.

The Applicant's representative wishes to thank the Examiner and his Supervisor for the courtesy of the Examiner Interview held the morning of September 13, 2004. The majority of the interview centered on whether Muramatsu discloses an unmeasurable region and whether its combination with Higashino is proper. No final resolution regarding these issues was reached during the interview. For this reason, the Examiner requested the draft response submitted and discussed during the interview be formally submitted.

35 U.S.C. § 103(a) Rejections

The rejection of claims 1-8 and 10 under 35 U.S.C. § 103(a), as being unpatentable over Higashino, in view of Muramatsu, is respectfully traversed based on the following.

Applicant admits that Higashino does disclose a detector that detects an unmeasurable region within a plurality of measurement regions. However, Muramatsu does not disclose creating distance data for unmeasurable regions. The Office Action on page 2 asserts that because the threshold is set to coincide with the focal length of the camera, "any region beyond the threshold is located too far away to identify accurately the position of the center of the image and unmeasurable." This is _inconsistent_ with Muramatsu itself and therefore _cannot_ be correct. This is readily apparent when one considers the flow chart in FIG. 5, and especially step S5. In step S5, which is only reached when the closest value d is _greater_ than the threshold value L, the final measured distance value D_0 is determined to be the mean of the measured distance values e1-e5 (Muramatsu, column 6, lines 8-10). Thus, Muramatsu explicitly states that for each region beyond the threshold value L, a distance e1-e5 is known. If a distance is known for each region, how can any such region be claimed to be "unmeasurable?"

It appears that the point of confusion is Muramatsu's use of the term "threshold value L." Column 5, lines 31-43 of Muramatsu discloses how this threshold value L is used. Muramatsu uses this threshold value L to determine if the scene to be imaged is "a scene including persons" or "a scene such as a landscape." Depending upon whether the closest value d is smaller or greater than a threshold value L determines which branch of the focusing method illustrated in FIG. 5 will be used. In other words, the threshold value L has nothing to do with whether a region is "_unmeasurable_," but rather with selecting the optimal _focusing_ scheme to be used for a scene.

Further, Muramatsu's technique is different from that required in claim 1. As found in the portion of Muramatsu indicated by the Office Action (column 5, line 60 to column 6, line 20 and FIG. 5), Muramatsu discloses a method for determining a final measured distance value D_0. This final measured distance value D_0 is created by one of two methods as illustrated in FIG. 5. In either case, the closest value d is compared to a threshold value L. If the closest value d is less than the threshold value L, the final measured distance value D_0 is set to this closest value d in step S4. Thus, in this first case,

Muramatsu does not disclose creating distance data for an unmeasured region for two reasons: First, Muramatsu does not detect whether a region is unmeasured (based on Muramatsu's disclosure (column 5, lines 64, 65) a distance is found for each region, e1-e5, so all regions are measured). Since Muramatsu <u>always</u> returns distance data, it cannot create distance data for unmeasured regions, as such regions do not <u>exist</u>, as noted above. Second, Muramatsu creates only a final measured distance value D_0, *i.e.*, Muramatsu does not create distance data for <u>each</u> region. In the second case, where the closest value d is greater than the threshold value L, the final measured distance value D_0 is set to the mean value of the measured distances. Again, Muramatsu does not disclose creating distance data for an unmeasured region for at least two reasons: First, as before, Muramatsu does not detect that a region is <u>unmeasured</u>. Second, Muramatsu has distance data for each region, e1-e5, and creates the final measured distance value D_0 by finding the means of these values in step S5. In other words, Muramatsu does not <u>create</u> distance data because it <u>has</u> distance data (e1-e5) for <u>each</u> region. In summary, Muramatsu does not disclose or suggest creating distance data for unmeasurable regions for at least two reasons: Muramatsu does not have unmeasured regions as its distance measuring sensor appears to always return a distance e1-e5. Because Muramatsu's distance measuring sensor always returns a distance and thus has no unmeasured regions, Muramatsu does not create distance data for regions. Second, when Muramatsu does create distance data, it is only a final measured distance value D_0, not a value for <u>each</u> unmeasured region. Thus, Muramatsu does not render obvious the invention of claim 1.

The combination of Higashino and Muramatsu will now be considered. By using the distance measuring sensor of Muramatsu, Higashino would not find unmeasurable regions. First, if one were to combine Higashino and Muramatsu, one of skill in the art would use the more capable distance measuring sensor. As Higashino's does not always return a distance (the output of its LED is too small), Muramatsu's distance measuring sensor that always returns a distance would be incorporated. Because the combined device would have a distance measuring sensor that always returns a distance, Higashino's detector that detects an unmeasurable region would be moot as no such unmeasurable

region would exist. One of ordinary skill in the art would then delete the unmeasurable region detector, as it would only increase the cost of the system while providing no benefit. Without an unmeasurable region detector, one of ordinary skill would not include a calculator for calculating a spacing on the object corresponding to the unmeasurable region as this increases cost and provides no benefit. Lastly, as no unmeasurable regions would be detected, one of ordinary skill would not include a creator for creating distance data for unmeasurable regions as this increases cost and provides no benefit. In summary, as no unmeasurable region detector, no calculator, and no creator would be found in a device corresponding to the combination of Higashino and Muramatsu, such a combination device would not render obvious the invention of claim 1.

Claims 2-8 depend, either directly or indirectly from claim 1. As claim 1 is considered nonobvious over the combination of Higashino and Muramatsu, claims 2-8 are considered nonobvious for at least the same reasons. Claims 2-8 are distinguishable over the combination of Higashino and Muramatsu for additional reasons as well. Claim 3 includes the limitation that the creator creates "the distance data of the unmeasurable region based on the distance data of the measurable regions adjacent to the unmeasurable region." Muramatsu does not create distance data for any regions, it measures it. Muramatsu does, however, create a final measured distance value D_0, but this clearly is for the _entire_ scene to be imaged, not distance data for _only_ an unmeasurable region as required by claim 3. This fact is doubly evident when one considers that Muramatsu finds distance data for _each_ region and therefore has _no_ unmeasurable regions. It should be noted that the Office Action assertion that Fig. 3a of the Muramatsu patent illustrates three regions (e2, e3, and e4) in the unmeasurable region is incorrect. This is because e2, e3, and e4 are in fact the _measured distance values_ for the three regions. That these measured distance values are found is obvious from column 6, lines 8-10, which describes step S5 as "[t]he mean value of the measured distance values e1-e5 is found." Such a mean value could not be found if the measured distance values were "unmeasurable." Therefore, the combination of Higashino and Muramatsu cannot render obvious the invention of claim 3 for this additional reason.

With respect to claim 4, Muramatsu again finds only a final measured distance value D_0, it does not <u>create</u> distance data for unmeasurable regions. Thus, while Muramatsu may disclose setting the <u>single</u> final measured distance value D_0 equal to the average of the closest two measured values (column 6, lines 13-19), this is not the same as creating distance data for <u>each</u> unmeasurable region. Therefore, the combination of Higashino and Muramatsu cannot render obvious the invention of claim 4 for this additional reason.

Claim 5 requires the creator to determine if it should create distance data for an unmeasurable region by comparing the distance data in measurable regions to a specific value. As before, Muramatsu does not create distance data for each region, be it measurable or "unmeasurable" because it <u>always</u> returns a measured distance value $e1$-$e5$. Second, the only data Muramatsu creates is a final measured distance value D_0, which is <u>not</u> on a per region basis. Next, while Muramatsu does use a threshold value L, this is <u>not</u> to determine whether the measured distance values are unmeasurable and thus require the creation of unmeasurable region data. Muramatsu uses the threshold value L to determine which of two algorithms it will use to <u>calculate</u> a final distance value D_0, not whether it should <u>create</u> distance data for an unmeasurable region. Therefore, the combination of Higashino and Muramatsu cannot render obvious the invention of claim 5 for this additional reason.

Claim 7 includes the limitation that the created distance data be based upon the luminance of both the measurable and unmeasurable regions. As before, Muramatsu does not find unmeasurable regions as it returns a value for each region and therefore has <u>no</u> unmeasurable regions. Further, assuming, *arguendo*, that Muramatsu did have unmeasurable regions corresponding to those regions with a measured distance value greater than the threshold value L, Muramatsu discloses using the luminance of only the <u>measurable</u> regions, <u>not</u> that of the "unmeasurable regions." *See* Muramatsu column 6, lines 34-41, which uses <u>only</u> the contrasts $c1$ and $c5$ in the "measurable regions" corresponding to measured distance values $e1$ and $e5$. Therefore, the combination of

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Higashino and Muramatsu cannot render obvious the invention of claim 7 for this additional reason.

Claim 10, like claim 1, includes the limitations of a detector for detecting an unmeasurable region, a calculator for calculating a spacing, and a creator for creating distance data. As discussed above, the combination of Higashino and Muramatsu would not include any of these elements, and thus would not render the invention of claim 10 obvious.

Accordingly, it is respectfully requested that the rejection of claims 1-8 and 10 under 35 U.S.C. § 103(a) as being unpatentable over Higashino, in view of Muramatsu, be reconsidered and withdrawn.

The rejection of claim 9 under 35 U.S.C. § 103(a), as being unpatentable over Higashino, in view of Muramatsu, and further in view of Tanaka, is respectfully traversed based on the following.

As discussed in detail above, Muramatsu does not disclose a creator for creating distance data of unmeasurable regions resulting in the combination of Higashino and Muramatsu having no detector for detecting an unmeasurable region, no calculator for calculating a spacing, and no creator for creating distance data of an unmeasurable region. Each of these three elements are limitations of claim 9, and thus the combination of Higashino and Muramatsu fails to render obvious the invention of claim 9.

The Office Action suggests the combination of Higashino, Muramatsu, and Tanaka renders the invention of claim 9 obvious. As Higashino and Muramatsu fails to disclose or suggest three limitations of claim 9, and Tanaka is included for its disclosure of a display for displaying a range and a controller for controlling a display, the combination of Higashino, Muramatsu, and Tanaka does not disclose or suggest at least three limitations of claim 9. Because the combination of Higashino, Muramatsu, and Tanaka fail to

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disclose or suggest each element in claim 9, the combination of Higashino, Muramatsu, and Tanaka cannot render obvious the invention of claim 9.

Accordingly, it is respectfully requested that the rejection of claim 9 under 35 U.S.C. § 103(a) as being unpatentable over Higashino, in view of Muramatsu, and further in view of Tanaka, be reconsidered and withdrawn.

CONCLUSION

Wherefore, in view of the foregoing remarks, this application is considered to be in condition for allowance, and an early reconsideration and a Notice of Allowance are earnestly solicited.

This Amendment does not increase the number of independent claims, does not increase the total number of claims, and does not present any multiple dependency claims. Accordingly, no fee based on the number or type of claims is currently due. However, if a fee, other than the issue fee, is due, please charge this fee to Sidley Austin Brown & Wood LLP's Deposit Account No. 18-1260.
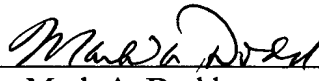
Any fee required by this document other than the issue fee, and not submitted herewith should be charged to Sidley Austin Brown & Wood LLP's Deposit Account No. 18-1260. Any refund should be credited to the same account.

If an extension of time is required to enable this document to be timely filed and there is no separate Petition for Extension of Time filed herewith, this document is to be construed as also constituting a Petition for Extension of Time Under 37 C.F.R. § 1.136(a) for a period of time sufficient to enable this document to be timely filed.

Any other fee required for such Petition for Extension of Time and any other fee required by this document pursuant to 37 C.F.R. §§ 1.16 and 1.17, other than the issue fee, and not submitted herewith should be charged to Sidley Austin Brown & Wood LLP's Deposit Account No. 18-1260. Any refund should be credited to the same account.

Respectfully submitted,

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